ACCELERATED NEOINTIMAL HYPERPLASIA AFTER DES IMPLANTATION IN LESIONS WITH IVUS-SIGNAL ATTENUATION: A 3D-IVUS ANALYSIS FROM THE J-DESSERT TRAIL

Poster Contributions
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Background: Favorable long-term outcomes of lesions with IVUS-signal attenuation following primary stenting have been reported in patients with acute myocardial infarction (AMI). This study aimed to evaluate the impact of attenuated-signal plaque (AP) on vessel response in non-AMI patients treated with drug-eluting stents.

Methods: Serial (baseline and 8 months) IVUS was performed in 137 non-AMI lesions electively treated with sirolimus- or paclitaxel-eluting stents. At pre-interventional IVUS, AP was defined as hypoechoic plaque with ultrasound attenuation without calcification. An attenuation score was calculated by grading the measured angle of attenuation as 0 to 4 for 0°, <90°, 90-180°, 180-270°, and >270°, respectively. The entire treatment segment was analyzed at 1-mm intervals.

Results: AP was observed in 41% of lesions. Compared with no-AP group, AP group had significantly larger vessel (p=0.01), plaque (p<0.01) and %plaque volumes (p=0.02) at baseline, as well as larger %neointimal volume (%NIV) (p=0.02) at follow-up. In AP, both total (the sum) and average (standardized for length) attenuation scores positively correlated with %NIV at follow-up (p<0.01, p=0.02).

Conclusions: A greater extent of plaque signal attenuation at baseline IVUS was associated with larger neointimal hyperplasia at follow-up. This result differs from previous data in AMI patients, possibly due to different etiologies of signal attenuation between thrombus-rich AMI and plaque-dominant non-AMI lesions.